January 1921

Test 072: Avery 8-16

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

UNIVERSITY OF NEBRASKA AGRICULTURAL ENGINEERING DEPARTMENT

UNIVERSITY FARM, LINCOLN

Copy of Report of Official Tractor Test No. 72

Dates of test: March 28 to May 31, 1921.
Name, model and rating of tractor: Avery 8-16
Serial No. Engine: LB3630. Serial No. Chassis: 26690
Manufacturer: Avery Company, Peoria, Ill.
Tractor Equipment Used: KW (151742) TK Magneto - Kingston E carburetor
Style and dimensions of wheel lugs: Spuds 2½" x 3 1/8" x 2¾" high.

BRAKE HORSE POWER TESTS

H.P. Dev.	Crank Shaft Speed R.P.M.	Time of Test: Min.	Fuel Consump. Kind of Fuel	Gals. per Hour @ Hrs.	Gals. H.P. Hour	Water Consump. Gals. per Hour Cooling F	In Fuel	Total	Temp. Deg. F. Cooling Fluid	Air	Humidity	Height of Barometer
RATED LOAD TEST												
16.66	758	120	Gaso.	2.15	7.76	5.5	X	5.5	210	76	52	28.50
Belt slippage 1.44%												
**VARYING LOAD TEST												
16.36	746	10	Gaso.									
16.25	740	10	"									
1.42	815	10	"									
4.45	808	10	"	Belt slippage 1.14%								
8.84	803	10	"									
13.13	796	10	"									
10.32	784	60	Gaso	1.67	6.20	5.00	X	5.00	210	80	52	28.50
MAXIMUM LOAD TEST												
16.76	753	60	Gaso.	2.29	7.33	4.00	X	4.00	205	71	52	28.50
Belt slippage 1.45%												
HALF LOAD TEST												
8.89	807	60	Gaso	1.46	6.09	3.00	X	3.00	210	85	52	28.50
Belt slippage 1.14%												

*Taken in discharge line from engine.

Remarks: The gasoline used as fuel in this test weighed 6.17 pounds per gallon.
**Note: The last line is an average for the hour.

727-S

Copy of Report of Official Tractor Test No. 72

(Corrected)

Drawbar Horse Power Tests

H. P. Dev.	Draw Bar Pull Lbs.	Speed Miles Per Hour	Crank Shaft Speed R.P.M.	Slip on Drive Wheels % **	Fuel Consump. Kind Used	Amt. Per Hour Gals.	H.P. Hrs. Per Gal.	Water Used Per Hour Gals.	Temp. Deg. F. * Cooling Fluid	Air	Average Humidity	Height of Barometer
Rated Load Test, Ten Hours												
8.23	1366	2.26	783	2.4 12.0	Gaso.	1.92	4.28	3.55	209	71	73	28.75
Maximum Load Test												
9.99	1690	2.22	742	0.5 9.4	Gaso.	--Not Recorded--			208	89	41	28.75
7.95	830	3.59	751	9.3 1.5	"	"	"		210	89	41	28.75

*Taken in discharge line from engine

Remarks: The rated load and first maximum tests were run in low gear.
The second maximum test was run in high gear.
** Two figures are given denoting slippage in each test. The first shows slippage at the rim of the wheel, and the second shows slippage at the point of the lug.

Oil Consumption: During the complete test consisting of about 42 hours running the following oil was used: For the engine, $10\frac{3}{4}$ gallons of Mobiloil A and Polarine medium.
For the transmission, none.

727-E

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Repairs and Adjustments:

After the limber-up run and before any official data were taken the following adjustments were made.

Removed pistons and relieved by taking off .006 inch.
Ground all valves.
Ground exhaust valve on front cylinder.
Relieved all piston rings.
Changed kerosene gasifiers to gasoline adapters in order to develop rated belt power on gasoline.

Brief Specifications: Avery 8-16

Motor: Own, 2 cylinder, horizontal, valve-in-head, opposed, bore - 5½", stroke - 6", rated speed - 750 r.p.m.

Chassis: 4 wheel, sliding frame transmission, expanding shoe clutch. rated speeds: low, 2¼ miles per hour; high 3½ miles per hour.

Total weight: 4900 pounds.

Fuel - Gasoline: This specification was changed from kerosene after tractor was submitted for test.

General Remarks

In the advertising literature submitted with the applications for test of this tractor we find some claims and statements which cannot be directly compared with the results of this test. It is our opinion that none of these are excessive or unreasonable except the following:

1921 catalogue, page 21, "Fuel: Kerosene, Distillate or Gasoline."
" " " 25, "It is perfectly balanced,"etc.
"It has better water space for cooling than a vertical motor."

We, the undersigned, certify that above is a true and correct copy of report of official tractor test No. 72.

Fred R. Nohavec
Engineer-in-Charge

Oscar W. Sjogren

E. E. Brackett

C. W. Smith
Board of Tractor Test Engineers.

727-E